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REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1 through 19 are pending in the application. Claims 7 through 9 and 13 have been objected to. Claims 1 through 6, 10 through 12 and 14 through 19 have been rejected.

Allowable Subject Matter

In the Office Action, the Examiner stated that claims 7 through 9 and 13 would be allowable if rewritten in independent form.

CLAIM REJECTIONS

35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1 through 6, 10 through 12 and 15 through 19 under 35 U.S.C. § 102(b), as being anticipated by U.S. Pat. No. 5,608,679 to Mi et al. (the '679 patent). Applicants respectfully traverse this rejection in view of the remarks that follow.

The '679 patent teaches:

"A method for storing a charge on memory devices which includes the steps of providing a first charging pulse to a memory device to charge the device to a first level less than a final level; testing the value of the charge to determine whether the charge is greater than the first level; if the value of the charge is less than the first level, providing a second set of charging pulses to the memory device, each of the pulses of the second set of pulses having a duration which is a fraction of the duration

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of the first pulse and a value sufficient to charge the device to the first level; testing the value of the charge to determine whether the charge is greater than the first level after each pulse of the second set of pulses; and once the charge has tested greater than the first level, providing a third set of charging pulses to terminals of the memory device, each of the pulses of the third set of pulses having a duration which is a fraction of the duration of the pulses of the second set of pulses and a value such that the charge furnished by each pulse is approximately equal to an allowable variation of the charge from the final value." ('679 patent abstract)

Independent claims 1 and 15 in the present application recite:

1. A multi-phase method of programming an array of non-volatile memory ("NVM") cells, said method comprising:

Applying to a first set of NVM cells first phase programming pulses; and

upon one or more NVM cells of the first set of cells reaching or exceeding a first intermediate threshold voltage level, applying to a terminal of one or more cells in the first set of cells second phase programming pulses adapted to induce relatively greater threshold voltage changes in cells having less stored charge than in cells having relatively more stored charge.

15. A System for programming an array of non-volatile memory ("NVM") cells, said system comprising:

a controller adapted to cause a charge circuit to produce first phase programming pulses and to determine when one or more NVM cell of a first set of cells receiving the first phase programming pulses reaches or exceeds a first intermediate voltage, and to then cause said charge pump circuit to apply to a terminal the one or more cells in the first set second phase programming pulses adapted to induce relatively greater threshold voltage changes in cells having less stored charge than in cells having relatively more stored charge.

Although the cited '679 teaches the programming of NVM cells using multiple series of programming pulses, where the parameters (e.g. duration) of the pulse vary from series to series, the '679 patent neither teaches nor suggests the a second series of pulses would

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"induce relatively greater threshold voltage changes in cells having less stored charge than in cells having relatively more stored charge." This limitation is present in both independent claim 1 and 15 and thus neither of these claims is anticipated by the '679 patent.

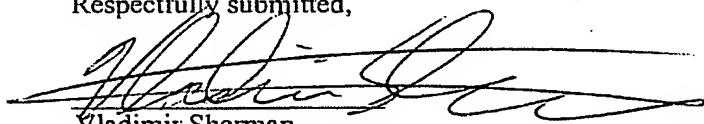
Therefore, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1 and 15. Since claims 2 through 14 depend from claim 1, and claim 16 through 19 depend from claim 15, Applicants consider claims 2 through 14 and claims 16 through 19 to be allowable by virtue of their dependence on allowable base claims.

Applicants consider the above explanation to render the 103 rejection of claim 14 moot.

In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Respectfully submitted,



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